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10/586,223	05/31/2007	Markus Kley	WW064USU	2722

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EXAMINER	
TRIEU, THAI BA	

ART UNIT	PAPER NUMBER
3748	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,223	KLEY ET AL.	
	Examiner	Art Unit	
	THAI BA TRIEU	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 July 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/14/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The Preliminary Amendment filed on July 14, 2006 is acknowledged.

Claims 1-10 were cancelled; and

Claims 11-30 were newly added.

For the purpose of this Office Action, the claims 11-30 will be examined as best understood by the examiner.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show : ***"Internal combustion engine 1"***; ***"Crankshaft 1.1***"; ***"Exhaust gas Turbine 2"***; ***"Hydrodynamic coupling 3"***; ***"Primary impeller 3.1"***; ***"Secondary impeller 3.2"***; and ***"Switching gear 4"*** as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as

"amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

1. IN THE ABSTRACT:

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to ***a single paragraph on a separate sheet within the range of 50 to 150 words***. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. IN THE SPECIFICATION:

1. On Pages 1-2, second paragraph of "Turbo-compound systems…, so that ***a retarder is***

functiona

lly created from the hydrodynamic coupling.... "should be revised as complete words, or complete sentence, or a whole paragraph as following:

--Turbo-compound systems…, so that **a retarder is functionally created** from the hydrodynamic coupling.... --

2. Applicant discloses "The object according to the invention ... by a turbo-compound system with the features ***of claim 1"*** (Page 3, lines 4-5); however, claim may be amended or cancelled during the prosecution of the instant application, and therefore, is not an appropriate characterization of the invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 and its dependent claims 12-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 11, line 12, the recitation of "can rotate" renders the claim indefinite, since it is not clear that under which condition of operating engine, the primary impeller

and secondary impeller ***can rotate*** in opposite direction with respect to each other; and under which condition of operating engine, the primary impeller and secondary impeller ***cannot rotate*** in opposite direction with respect to each other.

Applicants are required to identify theses conditions or to revise the claimed limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-30 are rejected under 35 U.S.C. 102(b) as best understood as being unpatentable over Okada et al. (Pub. Number EP 301 547 A2 or US Patent Number 4,843,822), in view of Bultmann (patent Number 4,114,734).

Regarding 11-20, Okada discloses a hydrodynamic coupling (21) for a turbine system of an internal combustion engine (1), the turbine system having an exhaust gas turbine (12), the internal combustion engine having a crank shaft (15) and an exhaust gas flow path (4a, 4b, 4c), the coupling comprising:

a primary impeller (21b, 21c);

a secondary impeller (21b, 21c);

a working chamber (within 21b, 21c) defined at least in part by the primary and secondary impellers (21b, 21c), the working chamber being filled with a working medium; and

a switching member (31; from 4b to 12; 40) for reversing a direction of rotation of the primary impeller or the secondary impeller (21b, 21c);

wherein the switching member comprises a flow conducting device in the exhaust gas flow path (from 4b to 12) that reverses the direction of rotation of the primary impeller by changing the direction of flow of the exhaust gas flow path;

wherein the flow conducting device comprises a conducting apparatus of the exhaust gas turbine (12).

wherein the switching member comprises a switching gear (40);

wherein the switching gear (40) is a reversing gear positioned between the crankshaft (15) and the secondary impeller (21b, 21c) (See Figure 1, and Column 4, lines 41-44);

wherein the switching gear (40) is a reversing gear positioned between the exhaust gas turbine (12) and the primary impeller (21b, 21c) (See Figure 1, and Column 4, lines 41-44);

wherein the switching gear (40) is disposed parallel to the hydrodynamic coupling (21) and comprises a shift coupling (56, 51) for switching the primary impeller and the secondary impeller to a mechanical driven connection with opposite directions of rotation;

wherein the shift coupling (56, 51) is a multi-disk coupling;

wherein the shift coupling (56, 51) is a hydrodynamic coupling; and

wherein the switching gear (40) is a planetary gear with a shift coupling (56, 51) (See Figure 1, Column 3, lines 10-32, Column 4, lines 23-44, and Column 6, lines 29-58).

However, Okada fails to disclose a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other.

Bultmann teaches that it is conventional in the art of the retarder for vehicles, to utilize a switching member (16, 17, 18) for reversing a direction of rotation of the primary impeller or the secondary impeller (13, 14) such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other (See Figures 1-2, Column 1, lines 34-68, Column 2, lines 1-4, Column 3, lines 31-52, and Column 4, lines 46-68).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other to improve the efficiency of the Okada device, since the use thereof would have provided a continuous brake for vehicles.

Alternatively, the substitution of a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other

shown in Bultmann for a switching means shown in Okada would have been obvious to one of ordinary skill in the art at the time of the invention since the substitution of the switching means shown in Bultmann would have yielded predictable results, namely, a continuous brake for vehicles. *KSR Int'l Co.* v. *Teleflex Inc.,* 82 USPQ2d 1395 (U.S. 2007).

Regarding claim 21-29, Okada discloses a turbine system for an internal combustion engine (1) having a crank shaft (15) and an exhaust gas flow path (4a, 4b, 4c), the system comprising:

an exhaust gas turbine (12) in communication with the exhaust gas flow (4a, 4b, 4c) of the internal combustion engine (1);

a hydrodynamic coupling (21) having a primary impeller and a secondary impeller (21b, 21c) defining at least in part a working chamber (within 21b, 21c) filled with a working medium, the hydrodynamic coupling (21) being operably connected between the crankshaft (15) and the exhaust gas turbine (12), wherein driving power is transmitted from the exhaust gas turbine (12) to the crankshaft (15) when the working chamber (within 21b, 21c) is filled with the working medium; and

a switching member (31; from 4b to 12; 40) for reversing a direction of rotation of the primary impeller or the secondary impeller (21b, 21c),

wherein the switching member (from 4b to 12) comprises a flow conducting device in the exhaust gas flow that reverses the direction of rotation

of the primary impeller (21b, 21c) by changing the direction of flow of the exhaust gas flow;

wherein the flow conducting device comprises a conducting apparatus of the exhaust gas turbine (12);

wherein the switching member comprises a switching gear (40);

wherein the switching gear (40) is a reversing gear positioned between the crankshaft (15) and the secondary impeller (21b, 21c);

wherein the switching gear (40) is a reversing gear positioned between the exhaust gas turbine (12) and the primary impeller (21b, 21c);

wherein the switching gear (40) is disposed parallel to the hydrodynamic coupling and comprises a shift coupling (51, 56) for switching the primary impeller and the secondary impeller to a mechanical driven connection with opposite directions of rotation;

wherein the shift coupling (51, 56) is a multi-disk coupling; and

wherein the switching gear (40) is a planetary gear with a shift coupling (51, 56) (See Figure 1, Column 3, lines 10-32, Column 4, lines 23-44, and Column 6, lines 29-58).

However, Okada fails to disclose a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other.

Bultmann teaches that it is conventional in the art of the retarder for vehicles, to utilize a switching member (16, 17, 18) for reversing a direction of rotation of the primary

impeller or the secondary impeller (13, 14) such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other (See Figures 1-2, Column 1, lines 34-68, Column 2, lines 1-4, Column 3, lines 31-52, and Column 4, lines 46-68).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other to improve the efficiency of the Okada device, since the use thereof would have provided a continuous brake for vehicles.

Alternatively, the substitution of a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other shown in Bultmann for a switching means shown in Okada would have been obvious to one of ordinary skill in the art at the time of the invention since the substitution of the switching means shown in Bultmann would have yielded predictable results, namely, a continuous brake for vehicles. *KSR Int'l Co.* v. *Teleflex Inc.,* 82 USPQ2d 1395 (U.S. 2007).

Regarding claim 30, the method as claimed would be inherent during the normal use and operation of the modified Okada device as disclosed in the rejections set forth above.

Claims 11-30 are rejected under 35 U.S.C. 102(b) as best understood as being unpatentable over Sekiyama et al. (US Patent Number 4,882,906), in view of Bultmann (patent Number 4,114,734).

Regarding 11-20, Sekiyama discloses a hydrodynamic coupling (121) for a turbine system of an internal combustion engine (101), the turbine system having an exhaust gas turbine (112), the internal combustion engine having a crank shaft (115) and an exhaust gas flow path (104a, 104b, 104d), the coupling comprising:

a primary impeller (121a, 121b);

a secondary impeller (121a, 121b);

a working chamber (within 121a, 121b) defined at least in part by the primary and secondary impellers (121a, 121b), the working chamber being filled with a working medium; and

a switching member (131; from 104b to 112; 156, 157) for reversing a direction of rotation of the primary impeller or the secondary impeller (121a, 121b);

wherein the switching member comprises a flow conducting device in the exhaust gas flow path (from 104b to 112) that reverses the direction of rotation of the primary impeller by changing the direction of flow of the exhaust gas flow path;

wherein the flow conducting device comprises a conducting apparatus of the exhaust gas turbine (112).

wherein the switching member comprises a switching gear (156, 157);

wherein the switching gear (156, 157) is a reversing gear positioned between the crankshaft (115) and the secondary impeller (121a, 121b) (See Figures 5-7, and Column 5, lines 65-68, Column 6, lines 1-57);

wherein the switching gear (156, 157) is a reversing gear positioned between the exhaust gas turbine (112) and the primary impeller (121a, 121b) (See Figures 1, and Column 5, lines 65-68, Column 6, lines 1-57);

wherein the switching gear (156, 157) is disposed parallel to the hydrodynamic coupling (121) and comprises a shift coupling (126, 142) for switching the primary impeller and the secondary impeller to a mechanical driven connection with opposite directions of rotation;

wherein the shift coupling (126, 142) is a multi-disk coupling;

wherein the shift coupling (126, 142) is a hydrodynamic coupling; and

wherein the switching gear (156, 157) is a planetary gear with a shift coupling (126, 142) (See Figures 5-7, and Column 5, lines 65-68, Column 6, lines 1-57).

However, Sekiyama fails to disclose a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other.

Bultmann teaches that it is conventional in the art of the retarder for vehicles, to utilize a switching member (16, 17, 18) for reversing a direction of rotation of the primary impeller or the secondary impeller (13, 14) such that the primary impeller and the

secondary impeller rotating in opposite directions with respect to each other (See Figures 1-2, Column 1, lines 34-68, Column 2, lines 1-4, Column 3, lines 31-52, and Column 4, lines 46-68).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other to improve the efficiency of the Sekiyama device, since the use thereof would have provided a continuous brake for vehicles.

Alternatively, the substitution of a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other shown in Bultmann for a switching means shown in Sekiyama would have been obvious to one of ordinary skill in the art at the time of the invention since the substitution of the switching means shown in Bultmann would have yielded predictable results, namely, a continuous brake for vehicles. *KSR Int'l Co.* v. *Teleflex Inc.,* 82 USPQ2d 1395 (U.S. 2007).

Regarding claim 21-29, Sekiyama discloses a turbine system for an internal combustion engine (101) having a crank shaft (115) and an exhaust gas flow path (104a, 104b, 104d), the system comprising:

an exhaust gas turbine (112) in communication with the exhaust gas flow (4a, 4b, 4c) of the internal combustion engine (101);

a hydrodynamic coupling (121) having a primary impeller and a secondary impeller (121a, 121b) defining at least in part a working chamber (within 121a, 121b) filled with a working medium, the hydrodynamic coupling (121) being operably connected between the crankshaft (115) and the exhaust gas turbine (112), wherein driving power is transmitted from the exhaust gas turbine (112) to the crankshaft (115) when the working chamber (within 121a, 121b) is filled with the working medium; and

a switching member (130; from 104b to 112; 156, 157) for reversing a direction of rotation of the primary impeller or the secondary impeller (121a, 121b),

wherein the switching member (from 104b to 112) comprises a flow conducting device in the exhaust gas flow that reverses the direction of rotation of the primary impeller (121a, 121b) by changing the direction of flow of the exhaust gas flow;

wherein the flow conducting device comprises a conducting apparatus of the exhaust gas turbine (112);

wherein the switching member comprises a switching gear (156, 157);

wherein the switching gear (156, 157) is a reversing gear positioned between the crankshaft (115) and the secondary impeller (121a, 121b);

wherein the switching gear (156, 157) is a reversing gear positioned between the exhaust gas turbine (112) and the primary impeller (121a, 121b);

wherein the switching gear (156, 157) is disposed parallel to the hydrodynamic coupling and comprises a shift coupling (126, 142) for switching the primary impeller and the secondary impeller to a mechanical driven connection with opposite directions of rotation;

wherein the shift coupling (126, 142) is a multi-disk coupling; and

wherein the switching gear (156, 157) is a planetary gear with a shift coupling (126, 142) (See Figures 5-7, and Column 5, lines 65-68, Column 6, lines 1-57).

However, Okada fails to disclose a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other.

Bultmann teaches that it is conventional in the art of the retarder for vehicles, to utilize a switching member (16, 17, 18) for reversing a direction of rotation of the primary impeller or the secondary impeller (13, 14) such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other (See Figures 1-2, Column 1, lines 34-68, Column 2, lines 1-4, Column 3, lines 31-52, and Column 4, lines 46-68).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other to

improve the efficiency of the Okada device, since the use thereof would have provided a continuous brake for vehicles.

Alternatively, the substitution of a switching member for reversing a direction of rotation of the primary impeller or the secondary impeller such that the primary impeller and the secondary impeller rotating in opposite directions with respect to each other shown in Bultmann for a switching means shown in Okada would have been obvious to one of ordinary skill in the art at the time of the invention since the substitution of the switching means shown in Bultmann would have yielded predictable results, namely, a continuous brake for vehicles. *KSR Int'l Co.* v. *Teleflex Inc.,* 82 USPQ2d 1395 (U.S. 2007).

Regarding claim 30, the method as claimed would be inherent during the normal use and operation of the modified Sekiyama device as disclosed in the rejections set forth above.

Prior Art

The IDS (PTO-1449) filed on July 14, 2006 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI BA TRIEU whose telephone number is (571)272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB
February 15, 2009

/Thai-Ba Trieu/
Primary Examiner
Art Unit 3748